Jet Propulsion Laboratory
California Institute of Technology

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May 15, 2003

Attention: All Prospective Proposers

Subject: Request for proposal (RFP) for Development of Technologies for the Terrestrial Planet Finder Mission (RFP No. JYC-572383)

The Jet Propulsion Laboratory (JPL) is inviting interested organizations to submit a written proposal for the development of technologies for the Terrestrial Planet Finder (TPF) Mission. The purpose of this RFP is to fund technology development and demonstration tasks and deliverables that address the feasibility of three TPF architectural approaches for achieving TPF mission objectives. JPL invites your organization to submit a proposal in conformance with the instructions contained herein. This website (http://acquisition.jpl.nasa.gov/rfp/tpfdevtech/) contains the entire RFP and is the only official source of information about this procurement. The contract terms and conditions are also available for review at the above website.

TPF Mission Overview

The TPF Mission is one of the key elements of NASA's Navigator Program and is a major roadmap mission in the Astronomical Search for Origins science theme in NASA's Office of Space Science (OSS). The TPF Mission is to directly detect and characterize earth-like planets in the habitable zone around as many as 30 to 150 stars out to distances of ~15 parsecs (pc). TPF is managed by JPL and is currently in the Advance Study Phase. The Project is expected to enter Formulation Phase in FY2007, Implementation Phase in FY2011, and to launch in FY2015.

Under previous TPF project activity, the candidates for the final TPF mission architecture have been narrowed to three: a "Visible Coronagraph" and an "IR Nulling Interferometer, either structurally connected or formation flying type." The next critical activity is to evaluate the relative merits and risks of these three architectures in order to make the final selection of TPF mission architecture in 2006. The TPF Project is currently pursuing parallel development paths for the three distinct architecture concepts. The Visible Coronagraph would use a telescope with a novel pupil or aperture mask or other similar scheme to block the light from the star and allow a planet up to ten orders of magnitude dimmer than the star to be detected and characterized. The Infrared Nulling Interferometers would combine the light (~7 to 20 μm) from multiple telescopes in such a way as to cancel the on-axis light from the central star while transmitting light from surrounding planets that are up to six orders of magnitude dimmer in the waveband of interest. The telescopes would either be mounted on a large deployable structure or on any array of free-flying spacecraft.

A number of categories of technology and technology items have been identified by JPL in the course of the previous studies and are listed in the RFP; Volume I; Section 2.0 [Technology Topics.] The list is not exhaustive, and additional alternative innovative technologies may exist. Interested proposers are encouraged to read further information available at the TPF web site (http://planetquest.jpl.nasa.gov/TPF/index.htm) to identify further technologies needed for or applicable to the TPF mission. The web site contains a final report (http://planetquest.jpl.nasa.gov/TPF/TPFrevue/FinlReps/JPL/tpfrpt1a.pdf) describing the three architectures and a preliminary description of their technology needs. The TPF Technology Plan is also posted on the website as Exhibit I of the RFP.

JPL expects to award approximately ten contracts from this RFP selected from the full range of requested technologies and alternative innovative technologies in such a way as to achieve the best value technology portfolio and avoid duplication of effort. JPL may choose to award more or fewer contracts depending on the number and quality of the proposals submitted and total funds available. Approximately $1M or more per year, for a total of approximately $3.6M, will be available to fund these contracts starting in August 2003 to May 2006. (JPL's ability to execute contracts is contingent upon receipt of funding.) The total value, annual funding levels and duration of each proposal is up to the discretion of the proposer except that all work must be completed no later than May 31, 2006.

Please send a notice of intent to propose to the undersigned via email by May 23, 2003. **Proposals are due at JPL on June 27, 2003 by 3:00 pm Pacific Daylight Time**. The yellow label below must be affixed to your proposals to ensure correct receipt and handling at delivery to JPL.

Any questions should be submitted in writing and directed only to the undersigned.

Sincerely,

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JPL Contract Negotiator

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JPL RFP No. JYC-572383

Close Date: 3:00 p.m. PDT June 27, 2003